

CHECKLIST FOR PROPOSERS

(U.S. Proposals Only-attach one copy to the submittal letter)

- ☐ Checklist for Proposers (Form A)
- ☐ Proposal Cover Page (completed online)
- ☐ Response to previous reviews (if applicable)
- ☐ Project Description
- ☐ Biographical Sketches (Form B)
- ☐ Facilities and Equipment Description
- ☐ Summary Budget /Budget Justification (Form C)
- ☐ Detailed 12-Month Budget (for each year of support) (Form D)
- ☐ Other Support (Form E)
- ☐ IRB or ACUC letter/form (if applicable)
- ☐ Letters of Collaboration/Support (if applicable)
- ☐ Appendices, if any
- ☐ Space Flight Experiment Requirements Summary (Form F)

BIOGRAPHICAL SKETCH

Provide the following information for the key personnel.
Photocopy this page or follow this format for each person.

NAME	POSITION TITLE
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EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training).

INSTITUTION(S) AND LOCATION	DEGREE(S) (if applicable)	YEAR(S)	FIELD(S) OF STUDY

RESEARCH AND PROFESSIONAL EXPERIENCE: Concluding with present position, list, in chronological order, previous employment, experience, and honors. Include present membership on any Federal Government public advisory committee. List, in chronological order, the titles, all authors, and complete references to all publications during the past three years, and to representative earlier publications pertinent to this application. If the list of publications in the last three years exceeds two pages, select the most pertinent publications. **DO NOT EXCEED TWO PAGES.**

BUDGET FOR ENTIRE PROJECT PERIOD**DIRECT COSTS ONLY**

<i>BUDGET CATEGORY TOTALS</i>		<i>1st BUDGET PERIOD</i>	<i>ADDITIONAL YEARS OF SUPPORT REQUESTED</i>		
			2nd	3rd	4th
PERSONNEL (Salary and Fringe Benefits) (Applicant organization only)					
SUBCONTRACTS					
CONSULTANT COSTS					
EQUIPMENT					
SUPPLIES					
TRAVEL	DOMESTIC				
	NON-DOMESTIC				
OTHER EXPENSES					
TOTAL DIRECT COSTS FOR EACH PERIOD					
TOTAL INDIRECT COSTS FOR EACH PERIOD					
TOTAL DIRECT + INDIRECT COSTS FOR EACH PERIOD					
TOTAL DIRECT + INDIRECT COSTS FOR ENTIRE PROJECT					

JUSTIFICATION FOR UNUSUAL EXPENSES :

BUDGET FOR 12 MONTH PERIOD
DIRECT COSTS ONLY

DETAILED BUDGET FOR 12-MONTH BUDGET PERIOD DIRECT COSTS ONLY		FROM		THROUGH	
Duplicate this form for each year of grant support requested		FUNDING AMOUNT REQUESTED			
PERSONNEL (Applicant Organization Only)					
NAME	ROLE IN PROJECT	EFFORT ON PROJECT	SALARY	FRINGE BENEFITS	TOTALS
	Principal Investigator				
SUBTOTALS					
→					
SUBCONTRACTS					
CONSULTANT COSTS					
EQUIPMENT (Itemize; use additional sheet if needed)					
SUPPLIES (Itemize by category; use additional sheet if needed)					
TRAVEL	DOMESTIC				
	NON-DOMESTIC				
OTHER EXPENSES (Itemize by category; use additional sheet if needed)					
TOTAL DIRECT COSTS FOR FIRST 12-MONTH BUDGET PERIOD					
INDIRECT COSTS FOR FIRST 12-MONTH BUDGET PERIOD					
TOTAL COST FOR FIRST 12-MONTH BUDGET PERIOD					

OTHER SUPPORT

Please provide information regarding specific sources of other support for the PI and each Co-I (not consultants). This information should be provided separately for each individual in the format shown below. List all active support for an individual before listing pending support. Include the investigator's name at the top of each page and number pages consecutively.

NAME OF INDIVIDUAL		
ACTIVE/PENDING		
Project Number (Principal Investigator)	Dates of Approved/ Proposed Project	Percent Effort
Source	Annual Direct Costs	
Title of Project (or Subproject)		
One-sentence description of project goals. (The major goals of this project are...)		
Brief description of potential scientific or commitment overlap with respect to this individual between this application and projects described above (summarized for each individual).		

Form F

SPACE FLIGHT EXPERIMENT REQUIREMENTS SUMMARY

In addition to the actual proposal, Form F is required for the Flight Feasibility Review. This form has been designed for a description of all preflight, inflight and post-flight components of the flight experiment. Form F consists of three sections:

- A general section to be completed for all flight proposals,
- A section to be completed only for experiments that require human subjects, and
- A section to be completed only for experiments that require non-human specimens.

If an experiment requires both human and non-human specimens, the entire form must be completed. If no specimens are required (e.g., radiation dosimetry), complete Part 1 and other applicable hardware and procedures questions. If the proposal consists of distinct segments with different requirements, fill out multiple forms to fully describe all segments. **Form F is mandatory for flight experiments.** Flight experiment proposals submitted without Form F completed will not be evaluated.

Please read the questions carefully and keep answers brief but thorough, ensuring that all requested information has been provided. Expand tables/response space as needed. Downloading the RTF file is the most effective way to complete this form.

Part I: General Information

1. Principal Investigator name: _____
2. Proposal title: _____
3. Duration of flight experiment
 - a. Minimum number of days in flight:
 - b. Desired number of days in flight:
4. Describe the types of procedures required for the inflight portion of the experiment. List each type of procedure separately (e.g., blood sample, record EKG, fix culture, etc.).

5. Storage of equipment and supplies other than animal/plant/specimen habitats (for all flight experiments)

Is temperature control of equipment/supplies needed:	Yes	No	Not Applicable	Not Known	Temperature (°C)	Estimated Volume (cm ³)
-- for launch?						
-- in flight?						
-- for return?						

6. Hazardous materials and controlled/radioactive substances (for all flight experiments)
Add more lines if necessary.

Material	Estimated Volume (cm ³)	Usage Time Period (e.g., Preflight, Inflight, Post-flight)
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- 1.
- 2.
- 3.

Part II: Research Involving Crewmembers as Subjects

7. Subjects
 - a. Number of subjects required for statistical significance:
 - b. Special requirements (e.g., gender, age, etc.):
 - c. Are inflight procedures needed?
 - d. Are pre- and post-flight procedures needed?
8. List all human subject restrictions (*e.g., specific dietary regimens, fluid intake regulation, work/rest cycles, exercise, etc.*). Indicate the impact on scientific outcome if restrictions cannot be met.
9. Is loading of experiment supplies or equipment less than 90 hours before launch required? If so, explain why.
10. Is removal of the experiment samples, data, or equipment less than 24 hours after landing required? If so, explain why.
11. What procedures will the crew need to learn in order to perform their role as subjects for the experiment?
List and briefly describe each procedure separately. Be sure to rate the difficulty of learning each procedure (1= easy; 10= difficult) and indicate when each procedure will be used (e.g., preflight, inflight, post-flight). Assume that the crewmembers do not have a medical background or prior experience with these kinds of experiments.

12. Does the experiment require a person to assist (operator) with data collection? If so, what procedures will be performed by this person?

List and briefly describe each procedure separately. Be sure to rate the difficulty of learning each procedure (1= easy; 10= difficult) and indicate when each procedure will be used (e.g., preflight, inflight, post-flight). Assume that the crewmembers do not have a medical background or prior experience with these kinds of experiments.

13. Equipment for human subject measurements

Add more lines if necessary.

a. Pre- and Postflight

What Variable will be Measured?	Equipment Needed for Measurement	Equipment Provider (Agency or PI)
1.		
2.		
3.		
4.		

b. Inflight *(List ALL needed inflight equipment for measurement, sample collection, or storage.)*

What Variable will be Measured?	Equipment Needed for Measurement	Equipment Provider (Agency or PI)
1.		
2.		
3.		
4.		

14. Is real-time data transmittal either required or highly desirable? (*“required” means that the experiment cannot be performed if downlink is not available; “highly desired” means that the experiment data will be transmitted if the downlink is available.*)
15. List special requirements for specimen and/or sample accommodation or manipulation.
16. Biological samples collected on the ISS may have to be stored on the station for up to 365 days. *Describe the requirements for preserving those samples (thermal control, preservatives, etc.).*
17. List each procedure that must be performed on each (crewmember) subject to meet experimental objectives. *Indicate the timeframe (e.g., launch minus 60 days (+/- 5 days)) and procedure duration (e.g., 60 minutes). Specifically state if data must be collected on landing day (R+0) or if R+1 or 2 day will suffice.*
 - a. Pre-/ Postflight procedures
 - b. Inflight procedures

Part III: Research Involving Non-Human Subjects

18. Use the table below to list the requirements for non-human specimens. *Add more rows if necessary.*

Specimen Type (e.g., species, strain, gender, weight, age)	Drugs, Tracers, Tags, etc.	Number of Specimens Required for Flight Experiment	Number of Specimens Required for Ground Control of Flight Experiment
1.			
2.			
3.			
4.			
5.			

19. Use the table below to list the required inflight experimental conditions for all non-human specimens and samples. *Be sure to completely describe, for each specimen or sample, the environmental parameters (e.g., temperature, humidity, CO₂, light level, atmospheric pressure) and allowable range for each parameter. Also indicate when the environmental conditions will be needed (e.g., Flight Day 3-10, mission duration, pre-injection, after fixation).*

Requirement	Tolerance (e.g. $\pm 1^{\circ}\text{C}$)	When needed?	Specimen/Sample
1.			
2.			
3.			
4.			
5.			

20. Is loading of experiment supplies or equipment less than 90 hours before launch required? If so, explain why.
21. Is removal of the experiment samples, data, or equipment less than 24 hours after landing required? If so, explain why.
22. Describe the method for delaying experiment activation until it is installed on the ISS.
23. Describe the method for preserving samples for up to 365 days on the ISS.
24. What procedures will the crew need to learn to perform the experiment?
List and briefly describe each procedure separately. Be sure to rate the difficulty of learning each procedure (1= easy; 10= difficult) and indicate when each procedure will be used (e.g., preflight, inflight, postflight).

25. List the procedures from Item 23 in the table below. *Indicate the frequency and an acceptable time range for each procedure (e.g., change media every 5 days \pm 1 day, fix sample on day 10 \pm 6 hours).*

Procedure	Flight Day and Time (if necessary)	Frequency	Acceptable Range
1.			
2.			
3.			
4.			

26. For each specimen, list preferred habitat or indicate NO PREFERENCE.

27. List equipment, tools, supplies needed for inflight experiment procedures.

28. List any special requirements for specimen and/or sample accommodation or manipulation.